

Safety Attribute Inspection (SAI) Data Collection Tool
5.1.8 Extended Operations (ETOPS) (AW)
Revision#:3 Revision Date:09/15/2009

ELEMENT SUMMARY INFORMATION

Scope of Element:

Purpose (operator's responsibility): To ensure the operator's Continuous Airworthiness Maintenance Program (CAMP) for Extended Operations (ETOPS) will support safe and reliable operations.

Objective (FAA oversight responsibility): To determine if the operator's Extended Operations (ETOPS) process:

- Meets all applicable requirements of Title 14 of the Code of the Federal Regulations (14 CFR) and FAA policies,
- Incorporates the safety attributes, and
- Identifies any shortfalls in the operator's Extended Operations (ETOPS) process.

Specific Instructions:

SAIs 5.1.8 AW and OP should be worked concurrently to assure complete evaluation.

SUPPLEMENTAL INFORMATION

Regulatory Requirements:

D.086, Operations Specifications
119.43, Certificate holder's duty to maintain operations specifications.
121.135, Manual contents
121.162, ETOPS Type Design Approval Basis
121.367, Maintenance, preventive maintenance, and alterations programs.
121.369, Manual requirements.
121.373, Continuing analysis and surveillance.
121.374, Continuous airworthiness maintenance program (CAMP) for two-engine ETOPS

Related CFRs & FAA Policy/Guidance:

Related CFRs:

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FAA Policy/Guidance:

FAA Order 8900.1, Volume 4, Chapter 6, Section 2
FAA Order 8900.1, Volume 6, Chapter 2, Section 37
AC 120-42B, Extended Operations (ETOPS and Polar Operations)

SAI SECTION 1 - PROCEDURES ATTRIBUTE**Objective:**

The questions in this section of the SAI will help verify that the operator's documented procedures identify who, what, when, where, and how those procedures are accomplished. These procedures must allow all personnel to perform their duties and responsibilities with a high degree of safety. 14 CFR part 121.135(a)(1)

Tasks

	The inspector shall accomplish the following tasks:
1	Review the information in the Supplemental Information section of this SAI.
2	Review the duties and responsibilities for management and other personnel who accomplish the processes associated with this element.
3	Review the documentation of the processes associated with this element.

Questions

1.1	<p>Is the specified airplane-engine combination, intended to conduct ETOPS, certificated to the airworthiness standards of transport-category airplanes and approved for ETOPS?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.162 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.2	<p>Does the manual, which includes procedures for maintenance, preventative maintenance and servicing, incorporate the ETOPS CAMP by supplementing the currently approved CAMP?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.135(b)(17); 121.367; 121.369; 121.374(a) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.3	<p>Does the ETOPS CAMP include the ETOPS maintenance document for use by each person involved in ETOPS?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(a) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <ol style="list-style-type: none"> 1. Verify the ETOPS maintenance document lists each ETOPS significant system. (JTI ID: 168) <i>Sources:</i> 121.374(a)(1)(i) 2. Verify the ETOPS maintenance document refers to or include the required ETOPS maintenance elements. (JTI ID: 169) <i>Sources:</i> 121.374(a)(1)(ii); Advisory Circular 120-42B, Chapter 3 3. Verify the ETOPS maintenance document refers to or include all supportive programs and procedures. (JTI ID: 170) <i>Sources:</i> 121.374(a)(1)(iii); Advisory Circular 120-42B, Chapter 3 	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p>4. Verify the ETOPS maintenance document refers to or include all duties and responsibilities. (JTI ID: 171) Sources: 121.374(a)(1)(iv); Advisory Circular 120-42B, Chapter 3</p> <p>5. Verify the ETOPS maintenance document clearly states where reference material is located in the operator's document system. (JTI ID: 172) Sources: 121.374(a)(1)(v); Advisory Circular 120-42B, Chapter 3</p>	
1.4	<p>Does the ETOPS CAMP include an ETOPS pre-departure service check (PDSC) tailored to the type and scope of operation?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(b) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <ol style="list-style-type: none"> 1. Verify the PDSC procedures are performed immediately before each ETOPS flight. (JTI ID: 173) Sources: 121.374(b)(1); Advisory Circular 120-42B, Chapter 3 2. Verify the PDSC procedures are adequate to determine the condition of all ETOPS significant systems. (JTI ID: 174) Sources: 121.374(b)(2)(i); Advisory Circular 120-42B, Chapter 3 3. Verify the PDSC contains procedures to verify the overall status of the airplane by reviewing applicable maintenance records. (JTI ID: 175) Sources: 121.374(b)(2)(ii); Advisory Circular 120-42B, Chapter 3 4. Verify the PDSC contains procedures for an interior/exterior inspection to include a determination of engine and APU oil levels and consumption rates. (JTI ID: 176) Sources: 121.374(b)(2)(iii); Advisory Circular 120-42B, Chapter 3 	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.5	<p>Does the ETOPS CAMP specify that only a trained person who is ETOPS qualified can accomplish and certify by signature proper completion of the ETOPS PDSC?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(b)(3) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.6	<p>Does the ETOPS CAMP clearly identify requirements for an ETOPS qualified person who may accomplish an ETOPS PDSC?</p> <p>Note(s): <i>A person is ETOPS qualified when that person satisfactorily completes the operator's ETOPS training program and is authorized by the certificate holder.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(b)(4)(i) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.7	<p>Does the ETOPS CAMP clearly identify requirements for an ETOPS signatory person who may certify an ETOPS PDSC?</p> <p>Note(s): <i>An ETOPS signatory person in the United States must be ETOPS qualified,</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p><i>work for an operator authorized to engage in 14CFR part 121 operation or work for a 14CFR part 145 repair station; and hold a U.S. mechanics certificate with airframe and powerplant ratings.</i></p> <p><i>An ETOPS signatory person outside the U.S. must hold a certificate in accordance with 14CFR part 43.17(c)(1) or hold the certificates needed or have the requisite experience or training to return aircraft to service on behalf of an ETOPS maintenance entity.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(b)(4)(ii) Kind Of Question: Flag, Supplemental</p>	
1.8	<p>Does the ETOPS CAMP define an ETOPS maintenance entity?</p> <p>Note(s): <i>A maintenance entity is authorized to perform ETOPS maintenance and complete the ETOPS PDSC.</i></p> <p><i>A maintenance entity is certificated to engage in 14CFR part 121 operations or a repair station under 14CFR part 145 or an entity authorized pursuant to 14CFR part 43.17(c)(2).</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(b)(4)(iii) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.9	<p>Does the ETOPS CAMP clearly identify limitations regarding dual-maintenance?</p> <p>Note(s): <i>The operator may not perform scheduled or unscheduled maintenance during the same visit on more than one significant system listed in the maintenance document if the improper maintenance could result in the failure of a significant system.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(c)(1) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.10	<p>Does the ETOPS CAMP, in the case of unforeseen circumstances regarding dual maintenance, include procedures that comply with 14CFR part 121.374(c)(2)?</p> <p>Note(s): <i>Procedures may allow, in the case of unforeseen circumstances, maintenance on each affected ETOPS significant system to be performed by a different technician or,</i></p> <p><i>Procedures may allow, in the case of unforeseen circumstances, maintenance on each affected ETOPS significant system to be performed by the same technician but under the direct supervision of a second qualified individual.</i></p> <p><i>If dual maintenance, in the case of unforeseen circumstances, a qualified individual is required to conduct a ground verification test and any in-flight verification test required under the program in accordance with 14CFR part 121.374(d).</i></p> <p>Updated: Rev # 3 on 09/15/2009</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	SRRs: 121.374(c)(2)(i); 121.374(c)(2)(ii); 121.374(c)(2)(iii) Kind Of Question: Flag, Supplemental	
1.11	<p>Does the ETOPS CAMP include a verification program?</p> <p>Note(s): <i>This program must provide for the resolution of discrepancies that will ensure the effectiveness of maintenance actions taken on ETOPS significant systems.</i></p> <p><i>This program must identify potential problems and verify satisfactory corrective action.</i></p> <p><i>This program must include ground verification policy and procedures and in-flight verification policy and procedures.</i></p> <p><i>This program must indicate clearly who is going to initiate the verification action and indicate clearly what action is necessary.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(d) Kind Of Question: Flag, Supplemental</p> <p>Related Design JTIs:</p> <ol style="list-style-type: none"> 1. Check that the operator's verification program includes a list of primary systems, by Air Transportation Association chapter. (JTI ID: 10) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 3 2. Check that the verification program includes written procedures to ensure the flight crew is fully briefed prior to dispatch concerning the event and/or the maintenance performed when regularly scheduled ETOPS revenue flight is used as a maintenance verification flight. (JTI ID: 177) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2 3. Check that the verification program includes conditions that require verification flights. (JTI ID: 178) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2 4. Ensure procedures for the verification action on an ETOPS revenue flight and require the action is documented completed upon reaching the ETOPS entry point. (JTI ID: 179) <i>Sources:</i> 121.374(d); Advisory Circular 120-42B, Chapter 3 5. Check that the verification program includes procedures for events involving propulsion system shutdown and for certain adverse trends or prescribed events. (JTI ID: 180) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2 6. Check that the verification program includes procedures for events involving engine change and for certain adverse trends or prescribed events. (JTI ID: 181) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2 7. Check that the verification program includes procedures for events involving major engine module change and for certain adverse trends or prescribed events. (JTI ID: 182) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2 8. Check that the verification program includes procedures for events involving primary system failure and for certain adverse trends or prescribed events. (JTI ID: 183) 	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p><i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2</p> <p>9. Check that the verification program includes procedures that monitor and evaluate corrective actions. (JTI ID: 184)</p> <p><i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2</p> <p>10. Check that the verification program includes procedures that identify and reverse the adverse trends. (JTI ID: 185)</p> <p><i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2</p>	
1.12	<p>Does the ETOPS CAMP identify all ETOPS-specific tasks?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(e) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <p>1. Verify that only an appropriately trained mechanic who is ETOPS qualified may accomplish and certify by signature the ETOPS-specific task has been completed. (JTI ID: 186)</p> <p><i>Sources:</i> 121.374(e); Advisory Circular 120-42B, Chapter 3</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.13	<p>Does the ETOPS CAMP contain procedures for centralized maintenance control for ETOPS?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(f) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.14	<p>Does the ETOPS CAMP clearly identify an ETOPS parts control program?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(g) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <p>1. Check that the Certificate Holder's ETOPS parts control includes the methods of verification of proper parts. (JTI ID: 42)</p> <p><i>Sources:</i> FAA Order 8900.1, Vol 4 Ch 6 Sec 3</p> <p>2. Check that the Certificate Holder's ETOPS parts control includes control procedures during parts pooling and borrowing. (JTI ID: 43)</p> <p><i>Sources:</i> FAA Order 8900.1, Vol 4 Ch 6 Sec 3</p> <p>3. Verify procedures are adequate to ensure the proper identification of parts used to maintain the configuration of airplanes used in ETOPS. (JTI ID: 187)</p> <p><i>Sources:</i> 121.374(g); Advisory Circular 120-42B, Chapter 3</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.15	<p>Does the ETOPS CAMP clearly identify an ETOPS Reliability Program?</p> <p>Note(s): <i>This program must be the certificate holder's existing Reliability Program or its Continuing Analysis and Surveillance System (CASS) supplemented for ETOPS.</i></p> <p><i>The program must be event-oriented and include procedures to report events to</i></p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p><i>the certificate holding district office (CHDO) within 96 hours of occurrence.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: D.086(a); 121.374(h); 121.374(h)(1); 121.374(h)(2) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <ol style="list-style-type: none"> 1. Verify the program reports to the certificate holding district office (CHDO) within 96 hours in-flight engine shut downs (IFSD). (JTI ID: 188) <i>Sources:</i> 121.374(h); Advisory Circular 120-42B, Chapter 3 2. Verify the program reports to the certificate holding district office (CHDO) within 96 hours diversions and turn backs for failures, malfunctions, or defects associated with any airplane or engine system. (JTI ID: 189) <i>Sources:</i> Advisory Circular 120-42B, Chapter 3 3. Verify the program reports to the certificate holding district office (CHDO) within 96 hours uncommanded power or thrust changes or surges. (JTI ID: 190) <i>Sources:</i> 121.374(h); Advisory Circular 120-42B, Chapter 3 4. Verify the program reports to the certificate holding district office (CHDO) within 96 hours inability to control the engine or obtain the desired power. (JTI ID: 191) <i>Sources:</i> 121.374(h); Advisory Circular 120-42B, Chapter 3 5. Verify the program reports to the certificate holding district office (CHDO) within 96 hours inadvertent fuel loss, unavailability or uncorrectable fuel imbalance in flight. (JTI ID: 192) <i>Sources:</i> 121.374(h); Advisory Circular 120-42B, Chapter 3 6. Verify the program reports to the certificate holding district office (CHDO) within 96 hours failures, malfunction, defects with ETOPS significant systems. (JTI ID: 193) <i>Sources:</i> 121.374(h); Advisory Circular 120-42B, Chapter 3 7. Verify the program reports to the certificate holding district office (CHDO) within 96 hours any event that would jeopardize the safe flight and landing. (JTI ID: 194) <i>Sources:</i> 121.374(h); Advisory Circular 120-42B, Chapter 3, 8. Verify procedures to investigate the cause of each above event and submit findings and corrective action to the CHDO. The report must include information specified in 121.703(e). (JTI ID: 195) <i>Sources:</i> 121.374(h); Advisory Circular 120-42B, Chapter 3 	
1.16	<p>Does the ETOPS CAMP clearly identify procedures for Propulsion System Monitoring?</p> <p>Note(s): <i>Verify requirement to do a comprehensive review to identify common cause effects and system errors based on computed In Flight Shut Down (IFSD) rate using all engines of a type used in the certificate holder's fleet.</i></p> <p><i>Verify procedures require a report of investigation and any necessary corrective action taken be submitted to the CHDO within 30 days if the above rates have been exceeded.</i></p> <p>Updated: Rev # 3 on 09/15/2009</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p>SRRs: 121.374(i) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <ol style="list-style-type: none"> 1. Verify common cause effect and system error review if the IFSD rate (computed on a 12 month rolling average) exceeds a rate of .05 per 1,000 engine hours for ETOPS up to and including 120 minutes. (JTI ID: 196) <i>Sources:</i> 121.374(i); Advisory Circular 120-42B, Chapter 3 2. Verify common cause effect and system error review if a rate of .03 per 1,000 engine hours for ETOPS beyond 120 minutes up to and including 207 minutes in the North Pacific Area of Operation and up to and including 180 minutes elsewhere. (JTI ID: 197) <i>Sources:</i> 121.374(i); Advisory Circular 120-42B, Chapter 3 3. Verify common cause effect and system error review if a rate of .02 per 1,000 engine hours for ETOPS beyond 207 minutes in the North Pacific Area of Operation and beyond 180 minutes elsewhere. (JTI ID: 198) <i>Sources:</i> 121.374(i); Advisory Circular 120-42B, Chapter 3 	
1.17	<p>Does the ETOPS CAMP clearly identify procedures for the ETOPS engine condition monitoring program?</p> <p>Note(s): <i>This program must detect deterioration at an early stage and allow for corrective action before safe operation is affected.</i></p> <p><i>This program must describe the parameters to be monitored, the method of data collection, the method of analyzing data, and the process for taking corrective action.</i></p> <p><i>This program must ensure that engine-limit margins are maintained so that a prolonged engine-inoperative diversion may be conducted at approved power levels and in all expected environmental conditions without exceeding approved engine limits. This includes limits for items such as rotor speeds and exhaust gas temperatures.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(j) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.18	<p>Does the ETOPS CAMP clearly identify procedures for ETOPS engine oil consumption monitoring program?</p> <p>Note(s): <i>This program must ensure that there is enough oil to complete each ETOPS flight.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(k) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <ol style="list-style-type: none"> 1. Check that the Certificate Holder's Engine oil consumption monitoring program includes the procedures for use and verification prior to the start of each ETOPS leg. (JTI ID: 39) 	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p><i>Sources:</i> FAA Order 8900.1, Vol 4 Ch 6 Sec 2</p> <p>2. Verify APU oil consumption is included in the program if an APU is required for ETOPS. (JTI ID: 199) <i>Sources:</i> 121.374(k); Advisory Circular 120-42B, Chapter 3</p> <p>3. Verify procedures that ensure oil consumption limit will not exceed the manufacturer's recommendation. (JTI ID: 200) <i>Sources:</i> 121.374(k); Advisory Circular 120-42B, Chapter 3</p> <p>4. Verify procedures that ensure oil consumption monitoring is continuous and includes oil added at each ETOPS departure point. (JTI ID: 201) <i>Sources:</i> 121.374(k); Advisory Circular 120-42B, Chapter 3</p> <p>5. Verify procedures that compare the oil added at each ETOPS departure point with the running average consumption to identify sudden increases. (JTI ID: 202) <i>Sources:</i> 121.374(k); Advisory Circular 120-42B, Chapter 3</p>	
1.19	<p>Does the ETOPS CAMP clearly identify procedures for an APU in-flight start program?</p> <p>Note(s): <i>If the airplane type certificate requires an APU, but does NOT require the APU to run during ETOPS portion of the flight, the certificate holder must develop and maintain a program acceptable to the FAA for cold soak in-flight start-and-run reliability.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(l) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <p>1. Check that instructions and information describe if in-flight APU starts are performed on an ETOPS flight, the start should be attempted on the return leg to the United States. (JTI ID: 203) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2</p> <p>2. Check that instructions and information describe the start attempt should be initiated before top of descent, or at such time, that will ensure a two-hour cold soak at altitude. (JTI ID: 204) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2</p> <p>3. Check that instructions and information describe if the APU fails to start on the first attempt, subsequent start attempts may be made within the limits of the airframe and APU manufacturer design specifications. (JTI ID: 205) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2</p> <p>4. Check that instructions and information describe that a continuation of the initial in-flight start validation program for each specific airframe / engine combination may be required, if less than 95 percent of in-flight start reliability is achieved in coordination with the Principal Maintenance Inspector (PMI). (JTI ID: 206) <i>Sources:</i> FAA Order 8900.1, Volume 4, Chapter 6, Section 2</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable</p>
1.20	<p>Does the ETOPS CAMP clearly identify, for each airplane-engine combination, a certificate holder developed maintenance training program to support ETOPS?</p> <p>Note(s):</p>	<p><input type="checkbox"/> Yes <input type="checkbox"/> No, Explain</p>

	<p><i>The ETOPS training program must provide training adequate to support ETOPS. It must include ETOPS-specific training for all persons involved in ETOPS maintenance and focuses on the special nature of ETOPS.</i></p> <p><i>ETOPS training must be in addition to the operator's maintenance training used to qualify individuals to perform work on specific airplanes and engines.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(m) Kind Of Question: Flag, Supplemental</p>	
1.21	<p>If an airplane-engine combination has a configuration, maintenance, and procedures (CMP) document, does the ETOPS CAMP have a system that ensures compliance with the applicable FAA approved document?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: D.086(d); 121.374(n) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.22	<p>Does the ETOPS CAMP require each substantial change to the ETOPS maintenance or training procedures be submitted to the CHDO for review?</p> <p>Note(s): <i>The certificate holder cannot implement a change until the CHDO notifies the certificate holder that the review is complete.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.374(o) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.23	<p>Do ETOPS CAMP procedures specify that only airplanes listed in Table 1 of operations specifications, paragraph D086 may be used for Extended Operations?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: D.086 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.24	<p>Do procedures specify continual assessment of the reliability of the propulsion and airframe systems of the ETOPS fleet in accordance with the programs identified in Table 2 of operations specifications, paragraph D086?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: D.086(b) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <ol style="list-style-type: none"> 1. Check that the programs identified in table 2 of operations specifications paragraph D86(b) include the instructions and information necessary to allow personnel concerned to perform the duty and responsibility of continually assessing the propulsion and airframe systems reliability within the ETOPS fleet. (JTI ID: 207) <i>Sources: D.086 (b)</i> 	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.25	<p>Are the items controlled by the programs listed in Table 2 of operations specifications, paragraph D086 identified in the operator's system?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	<p>Updated: Rev # 3 on 09/15/2009 SRRs: D.086(c) Kind Of Question: Flag, Supplemental</p> <p><i>Related Design JTIs:</i></p> <ol style="list-style-type: none"> 1. Check that the manual contains a general policy that they shall identify the items controlled by the programs listed in Table 2 operations specifications paragraph D86. (JTI ID: 209) <i>Sources: D.086 (c)</i> 2. Check that the manual includes instructions and information necessary to allow personnel to identify in the manual the items controlled by the programs listed in Table 2 operations specifications paragraph D86. (JTI ID: 210) <i>Sources: D.086 (c)</i> 	
1.26	<p>Do procedures address the intent of the guidance contained in FAA Order 8900.1, Volume 4, Chapter 6, Section 2?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.27	<p>Do procedures address the intent of the guidance contained in FAA Order 8900.1, Volume 6, Chapter 2, Section 37?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.28	<p>Do procedures address the intent of the guidance contained in AC 120-42B?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
1.29	<p>Does the manual include a requirement to comply with the operations specification related to this element including clearly identified excerpts, references, mandatory compliance requirements, or other information that will keep employees informed of the impact on their duties and responsibilities?</p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 119.43(b); 119.43(c); 121.135(a)(4) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.30	<p>Does the manual contain policies and procedures that include the duties and responsibilities for personnel involved with this element?</p> <p>Note(s): <i>This includes personnel, in addition to those required by 14 CFR part 119, who have authority and responsibility for processes covered by this element.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.135(b)(2) Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
1.31	<p>Does the manual refer to the appropriate sections of 14 CFR, and are the procedures consistent with the appropriate 14 CFR references or Operating Certificate concerning this element?</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

	Note(s): <i>Procedures for flag and supplemental operations must be consistent with applicable foreign regulations as well.</i> Updated: Rev # 3 on 09/15/2009 SRRs: 121.135(a)(4); 121.135(b)(3) Kind Of Question: Flag, Supplemental	
1.32	Does the manual contain general policies that require compliance with the SRRs? Updated: Rev # 3 on 09/15/2009 SRRs: 121.135(b)(1) Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

SAI SECTION 1 - PROCEDURES ATTRIBUTE Drop-Down Menu	
1.	No policy, procedures, instructions, or information specified.
2.	Procedures or instructions and information do not identify who, what, when, where, how.
3.	Policy, procedures, or instructions and information do not comply with CFR.
4.	Policy, procedures, or instructions and information do not comply with FAA policy and guidance.
5.	Policy, procedures, or instructions and information do not comply with other documentation (e.g., manufacturer's data, Jeppesen Charts, etc.).
6.	Policy, procedures, or instructions and information unclear or incomplete.
7.	Documentation quality (e.g., unreadable or illegible).
8.	Policy, procedures, or instructions and information inconsistent across certificate holder manuals (FOM - Flight Operations Manual to GMM - General Maintenance Manual, etc.).
9.	Policy, procedures, or instructions and information inconsistent across media (e.g., paper, microfiche, electronic).
10.	Resource requirements incomplete (personnel, facilities, equipment, technical data).
11.	Other.

SAI SECTION 2 - CONTROLS ATTRIBUTE

Objective:

The questions in this section of the SAI will help determine if controls (i.e. checks and restraints) are designed into the processes associated with this element to ensure policies and procedures are followed to achieve desired results.

Tasks

The inspector shall accomplish the following tasks:

- 1 Review the policies, procedures, instructions and information to understand the controls associated with this element.

Questions

2.1	Is there a control in place to ensure aircraft being used in ETOPS operations have been configured and maintained according to the conditions and limitations of the ETOPS Continuous Airworthiness Maintenance Program (CAMP), and operations specifications D086? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.2	Is there a control in place to ensure the ETOPS maintenance document is available for use by all personnel involved with ETOPS? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.3	Is there a control in place to ensure that maintenance personnel who maintain aircraft used in ETOPS operations are qualified and trained in the policy and procedures of the operator's CAMP and in the specific procedures of the ETOPS CAMP? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.4	Is there a control in place to ensure pre-departure service checks are being performed appropriately? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.5	Is there a control in place to ensure that limitations on dual maintenance are being monitored and controlled effectively? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.6	Is there a control in place to ensure that the ETOPS ground and in-flight verification program is effective and being properly used? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

2.7	<p>Is there a control in place to ensure an appropriately trained mechanic who is ETOPS qualified accomplishes and certifies all identified ETOPS-specific tasks?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.8	<p>Is there a control in place to ensure the centralized maintenance control for ETOPS is effective and being properly used?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.9	<p>Is there a control in place to ensure the ETOPS parts control program is effective and being properly used?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.10	<p>Is there a control in place to ensure propulsion system monitoring is effective and being properly used?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.11	<p>Is there a control in place to ensure the engine condition monitoring program is effective and being properly used?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.12	<p>Is there a control in place to ensure the engine oil consumption monitoring program is effective and being properly used?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
2.13	<p>Is there a control in place to ensure in-flight APU starts are performed at the appropriate times to ensure cold soak in-flight start and run reliability?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.14	<p>Is there a control in place to ensure the aircraft meets all requirements for configuration, maintenance, and procedures (CMP) for extended-range operations in accordance with the operator's design?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain <input type="checkbox"/> Not Applicable
2.15	<p>Is there a control in place to ensure the FAA Certificate Holding District Office (CHDO) is notified within 96 hours of event-oriented findings from the reliability program or Continuous Analysis and Surveillance System?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

SAI SECTION 2 - CONTROLS ATTRIBUTE Drop-Down Menu	
1.	No controls specified.
2.	Documentation for the controls do not identify who, what, when, where, how.
3.	Controls incomplete.
4.	Controls could be circumvented.
5.	Controls could be unenforceable.
6.	Resource requirements incomplete (personnel, facilities, equipment, technical data).
7.	Other.

SAI SECTION 3 - PROCESS MEASUREMENT ATTRIBUTE

Objective:

Process measurements ensure the operator uses an internal evaluation function to detect, identify, and eliminate or control hazards and the associated risk. For airworthiness elements this is a required function of operator's Continuing Analysis and Surveillance System (CASS), required by 14 CFR part 121.373. The director of safety and the quality assurance department often work together to accomplish this function for the operator. Negative findings could require amendments to the safety/internal evaluation program or CASS audit forms or checklists.

Tasks

	The inspector shall accomplish the following tasks:
1	Review the control questions in Section 2 of this SAI.
2	Review the operator's policies, procedures, instructions, and information to gain an understanding of the process measurements accomplished for this element.

Questions

3.1	<p>Are there process measurements that evaluate whether the operator's policies, procedures, and controls are achieving the desired results?</p> <p>Note(s): <i>Inspectors should refer to the controls in section 2 of this SAI for possible process measurements for this element.</i></p> <p><i>Persons engaged in this process should have a method for identifying undesired results.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.373 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.2	<p>Do the operator's process measurements assess the performance of the processes associated with this element?</p> <p>Note(s): <i>Verify audits exist to measure this elements performance.</i></p> <p><i>Verify audits are scheduled for this element.</i></p> <p><i>Verify audits ensure everyone, including all outsource providers; comply with the operator's program, manual and all applicable regulations and statutes.</i></p> <p>Updated: Rev # 3 on 09/15/2009 SRRs: 121.373 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.3	<p>Does the operator's program require the documentation of process measurement results?</p> <p>Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

3.4	Does the operator's program describe how the process measurement results are used to improve the ability to achieve the desired results? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
3.5	Does the organization that conducts the process measurements have direct access to the person with responsibility for this element? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

SAI SECTION 3 - PROCESS MEASUREMENT ATTRIBUTE Drop-Down Menu	
1.	No process measurements specified.
2.	Documentation for the process measurements does not identify (who, what, when, where, how).
3.	Inability to identify negative findings.
4.	No provisions for implementing corrective actions.
5.	Ineffective follow-up to determine effectiveness of corrective actions.
6.	Resources requirements (personnel, facilities, equipment, technical data).
7.	Other.

SAI SECTION 4 - INTERFACES ATTRIBUTE

Objective:

Data collected in this section helps determine if the operator manages the interfaces (i.e. interactions) associated with this element. Interfaces occur in a procedure where the responsibility for accomplishing work is transferred from one person, work group, or organization to another. Procedures must be detailed enough to ensure the smooth transfer of work and information.

Tasks

	The inspector shall accomplish the following task:
1	Review interfaces associated with the processes for this element.

Questions

4.1	Where interfaces exist in this element, are the procedures written in enough detail to preclude a breakdown or discontinuity in the activity? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
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SAI SECTION 4 - INTERFACES ATTRIBUTE

Drop-Down Menu

1.	No interfaces specified.
2.	The following interfaces not identified within the certificate holder's manual system:
3.	Interfaces listed are inaccurate.
4.	Specific location of interfaces not identified within the manual system.
5.	Other

SAI SECTION 5 - MANAGEMENT RESPONSIBILITY & AUTHORITY ATTRIBUTE	
Objective: Data from questions in this section will help the determine if there is an identifiable, qualified (when required by CFR), and knowledgeable person who is: <ul style="list-style-type: none"> • Responsible for the process, • Answerable for the quality of the process, and • Has the authority to establish and modify the process. 	
Tasks	
	The inspector shall accomplish the following tasks:
1	Identify the person(s) who has overall responsibility for this element.
2	Identify the person(s) who has the authority to revise the procedures associated with this element.
3	Review the duties and responsibilities of the above person(s).
4	Review the appropriate organizational chart.

Questions		
5.1	Is an individual(s) identified who is responsible for the quality of the procedures associated with this element? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
5.2	Is an individual(s) identified who has the authority to establish and modify the policies, procedures, instructions, and information associated with this element? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
5.3	Are duties and responsibilities documented for those who manage the procedures associated with this element? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain
5.4	Does the operator document the procedures for delegation of authority for this element? Updated: Rev # 3 on 09/15/2009 Kind Of Question: Flag, Supplemental	<input type="checkbox"/> Yes <input type="checkbox"/> No, Explain

SAI SECTION 5 - MANAGEMENT RESPONSIBILITY & AUTHORITY ATTRIBUTE Drop-Down Menu	
1.	Not documented.
2.	Documentation unclear.

3.	Documentation incomplete.
4.	Other.